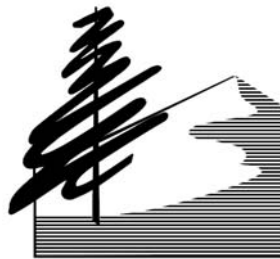


**Calavera Hills and Robertson Ranch
Habitat Conservation Area**
(S031)

Annual Report
October 2006 - September 2007

Prepared for:
U.S. Fish and Wildlife Service
California Department of Fish and Game
City of Carlsbad

Prepared by:



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November 2007

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I. Introduction

This report summarizes the management activities performed or overseen by the Center for Natural Lands Management (Center, CNLM) at the Calavera Hills and Robertson Ranch Habitat Conservation Area (Preserve) during the management year beginning on October 1, 2006, and ending on September 30, 2007. This work plan has been developed from the guidelines for goals and objectives set forth in the Calavera Hills Phase II Final Habitat Management Plan (HMP) dated October 2002 (Planning Systems 2002), and the Robertson Ranch East Village Open Space Land Management Plan (OSMP) (Planning Systems 2006), and as agreed to by the United States Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG).

The Center for Natural Lands Management (Center) was deeded Conservation Easements (CEs) by McMillin Homes on the Calavera Hills Phase II Habitat Conservation Area and the Robertson Ranch East Village Habitat Conservation Area in June 2006 and February 2007, respectively. Both properties were set aside by McMillin Homes as mitigation for housing developments to protect remaining habitat for the coastal California gnatcatcher (*Polioptila californica californica*) and other listed plant and wildlife species covered under the Multiple Habitat Conservation Plan (MHCP).

In order to simplify future budgetary and planning considerations since assuming CEs on the Robertson Ranch property, both Calavera Hills Phase II and Robertson Ranch properties have been merged to form a single preserve (hereafter 'Preserve'). This represents the first annual report for this preserve in its entirety. A report was sent to the City of Carlsbad, USFWS and CDFG in December 2006 detailing the activities carried out on the Calavera Hills II property during that partial year of management.

The Preserve is comprised of seven management units (Village H, K, R, U, W, X, and Robertson Ranch East Village), is situated approximately three miles inland, and is bisected by Carlsbad Village Drive and College Avenue (Figures 1 and 2). Village R is owned by the Calavera Hills Master Association; Robertson Ranch East Village and Village H are owned by the Calavera Hills II, LLC c/o The Corky McMillan Companies, with the future owner to be the Robertson Ranch Masters Home Owners Association; and Villages K, U, W, and X are owned by the Calavera Hills II Home Owners Association (HOA). The Preserve contains approximately 201 acres of dedicated natural open space which consists mostly of Diegan coastal sage scrub.

Management at the Preserve includes maintaining signs, gates and fences (capital improvements), biological surveys, habitat maintenance and restoration, public services, and reporting. Each of these activities and their fiscal year results are summarized below and fully described within this report.



Center for Natural Lands Management



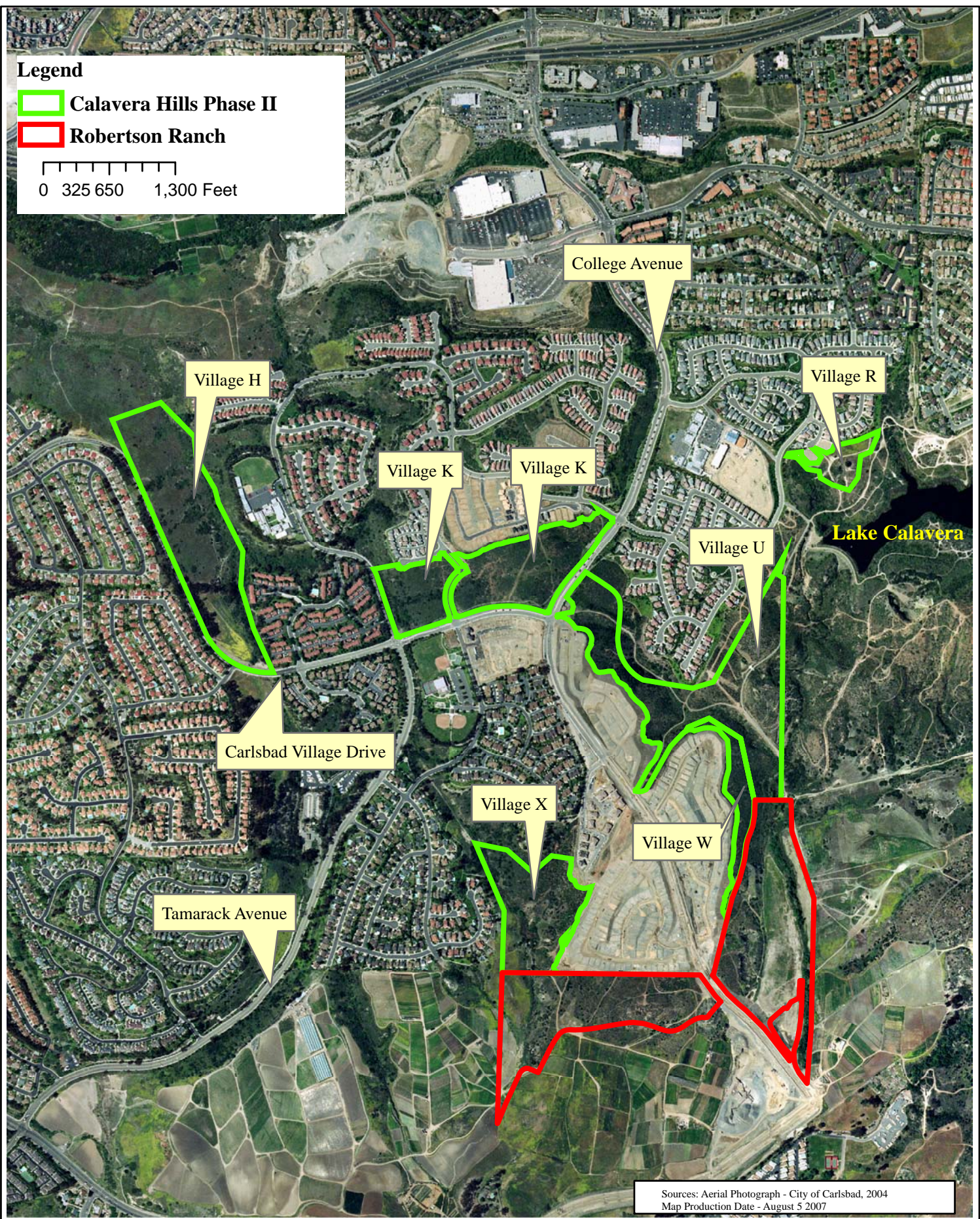


Figure 2
Preserve Location Map
 Calavera Hills Phase II and Robertson Ranch - Carlsbad, CA



2006-2007 CNLM ACTIVITY SUMMARY

- We installed over 2600 feet of three-strand smooth-wire fencing and installed a chain-link gate
- We incidentally noted any reptiles, birds, and mammals observed on-site while conducting patrols, maintenance, or other monitoring tasks
- We detected fifteen pair and one single male of the coastal California gnatcatcher
- One population of Palmer's grapplehook (*Harpagonella palmeri*) was censused and mapped
- We assessed native grassland habitat using both point-intercept and CNPS rapid assessment methods
- We conducted regular patrol, site enforcement, and trash pickup to protect the Preserve
- We removed nonnative plant species including over 300 tree tobacco (*Nicotiana glauca*) and pampas grass (*Cortaderia selloana*), many black mustard (*Brassica nigra*), over 500 artichoke thistle (*Cynara cardunculus*), and several hundred fennel (*Foeniculum vulgare*) with herbicide and mechanical methods
- We continued to mow crown daisy (*Chrysanthemum coronarium*) in Village H
- We coordinated weed treatments in Calavera Creek and the Robertson Ranch East Village wetland restoration area with RECON Environmental personnel
- We began removing weeds at Village R in preparation for a planned restoration effort
- We corresponded with HOA's and landscapers to limit irrigation runoff into the preserve, control weeds inside their property, and to stop them from dumping landscaping into CE
- We met with Carlsbad Unified School District teachers to discuss using the Preserve as an educational tool
- We conducted baseline photo-documentation of Robertson Ranch East parcels

II. Capital Improvements

With the aid of contractor labor and materials, approximately 2500 feet of 3-strand smooth wire fencing was installed along the western and southern edges of Village H, and along the entire borders of Village K. A chain-link gate was also installed along the SDGE access road near the boundary of Village X and Robertson Ranch East Village parcels. Additional fencing was installed in smaller segments by Center employees at either side of this gate, and along both sides of College Avenue, along the boundaries of Robertson Ranch East Village Parcels. The wildlife crossing at this section had been illegally used by motorcyclists and as a migrant worker throughway. Wire was installed to dissuade further human uses of this crossing, and to promote animal usage. This fencing also sufficed as a primary barrier to trespass in the vernal pool area, as specified in the Robertson Ranch East Village OSMP. Fencing was installed by Center personnel along an open area on the northeast corner of Village K, and permission is currently

being sought through the HOA management for extension of this fencing to corner-posts on HOA-maintained property. All fencing was signed immediately following installation.

III. Biological Surveys

The Center performed the first set of biological surveys in Spring 2006. The management plans (HMP 2002, and OSMP 2006) outline the goals of biological monitoring at the Preserve. The general goal of the monitoring activities at the Preserve is to 1) collect baseline data and 2) begin to develop population trend data on individual species within the preserve for certain taxonomic groups and the vegetation community. Biological surveys are described below by the following categories: reptiles and amphibians, mammal, birds, plants and vegetation communities. A discussion of the biological surveys completed during the 2006-2007 fiscal year are described below under each appropriate category.

1. Reptiles and Amphibians Reptiles and amphibians were noted anecdotally during surveys for other taxa, and during regular patrols and maintenance activities. Species detected during the year include ringneck snake (*Diadophis punctatus*), California kingsnake (*Lampropeltis getula californiae*), western fence lizards (*Sceloporus occidentalis*) and side-blotched lizards (*Uta stansburiana*), and coastal whiptail (*Aspidoscelis tigris stejnegeri*).

2. Mammals Mammals observed during patrols included a kangaroo rat (*Dipodomys* ssp.), cottontail rabbit (*Sylvilagus audubonii*), California ground squirrel (*Spermophilus beecheyi*), and coyote (*Canis latrans*).

3. Birds Two raptor species were observed and mapped. They were seen foraging on the Preserve this year (Figure 3). These include the Northern Harrier (*Circus cyaneus*), a CDFG species of special concern, and the more common red-tailed hawk (*Buteo jamaicensi*). The red-tailed hawk is nesting within the Eucalyptus woodland in Village K.

USFWS protocol surveys for coastal California gnatcatchers were conducted during the months of April and May on three separate days (Table 1). Survey procedure followed the USFWS accepted protocol for conducting gnatcatcher surveys. Table 1 outlines survey dates, times, and weather conditions. Surveys were conducted by Mr. Markus Spiegelberg, who holds a USFWS Section 10a(1)(a) recovery permit (787924-8) authorizing such surveys. Twelve pair and one single male gnatcatcher were observed by CNLM during these surveys (Figure 3). Three pair were observed by Merkel and Associates in the west parcel of Roberston Ranch.

4. Plants and Vegetation Communities

Thread-leaved brodiaea Mapping and censusing surveys will be conducted for all sensitive plant species in 2008. Surveys for thread-leaved brodiaea (*Brodiaea filifolia*) were scheduled to occur this year, but no flowering individuals were found. Ten

individuals that were likely thread-leaved brodiaea, but could not be identified because they were not flowering, were found in their vegetative state. These individuals were previously found at the Village H grasslands site during the project permitting process (RECON 2001).

Table 1. 2007 USFWS Coastal California Gnatcatcher Surveys

Date	Time	Weather
4/27/2007	6:30 am - 11:30 am	60-75° F; wind 0-3 mph; clear
5/4/2007	7:00 am - 11:30 am	56-62° F; wind 2-5 mph; clear
5/18/2007	7:00 am - 11:30 am	65-70° F; wind 0-5 mph; clear

Other Sensitive Plant Species Only one sensitive annual species was found on the Preserve during this fiscal year. One population of Palmer's grapplinghook was censused and mapped in Village U that had previously been mapped during initial surveys (RECON 2001).

Native Grassland Habitat Evaluation Four 100-meter transects were established in the four largest patches of native grassland at Village H. These grasslands contain at least seven known patches of thread-leaved brodiaea (RECON 2001). The transects were installed perpendicular to the hillside, and fit solely within the native grasslands. The point-intercepts were conducted in late June. The interval was read at every half-meter.

The results of a first year's analysis (Table 2, Figure 4) reveal that non-native grasses dominate all transects by as much as twice the coverage of native grasses and forbs. The transects consist of two along the upper hillside and two along the lower hillside. The patterns suggest that *Nassella puchra* is the dominant native up-slope, while *N. lepida* is the dominant native down-slope. Belt transects were run for species diversity one meter either side of the transect center, and no thread-leaved brodiaea were observed here, or in any other area nearby transects.

An analysis was done to inform future survey efforts. No meaningful differences were observed between any of the cover values categorized by native/exotic, habit (forb, grass, shrub), or litter/bare ground for one-meter intervals vs. half-meter intervals. Transects were set-up with this 100-meter distance in mind, in order to determine possible sites for paired experimental thatch and herbicide treatments. If sufficient rainfall takes place in the 2007-2008 management year, thread-leaved brodiaea populations will be censused, mapped, and overlain with the transects to further determine areas best suited for habitat enhancement.

CNPS Rapid Assessments Three rapid assessments were conducted during late Spring 2007 in the Village H grasslands with the help of CNPS volunteers and the Preserve Manager. These were done in an effort to help the State of California better refine vegetation associations for native grasslands.

- ▲ Coastal California Gnatcatcher
- ▲ Greater road-runner
- ▲ Least Bell's vireo
- Northern harrier
- Red-tailed hawk
- Yellow-breasted Chat
- Preserve Area

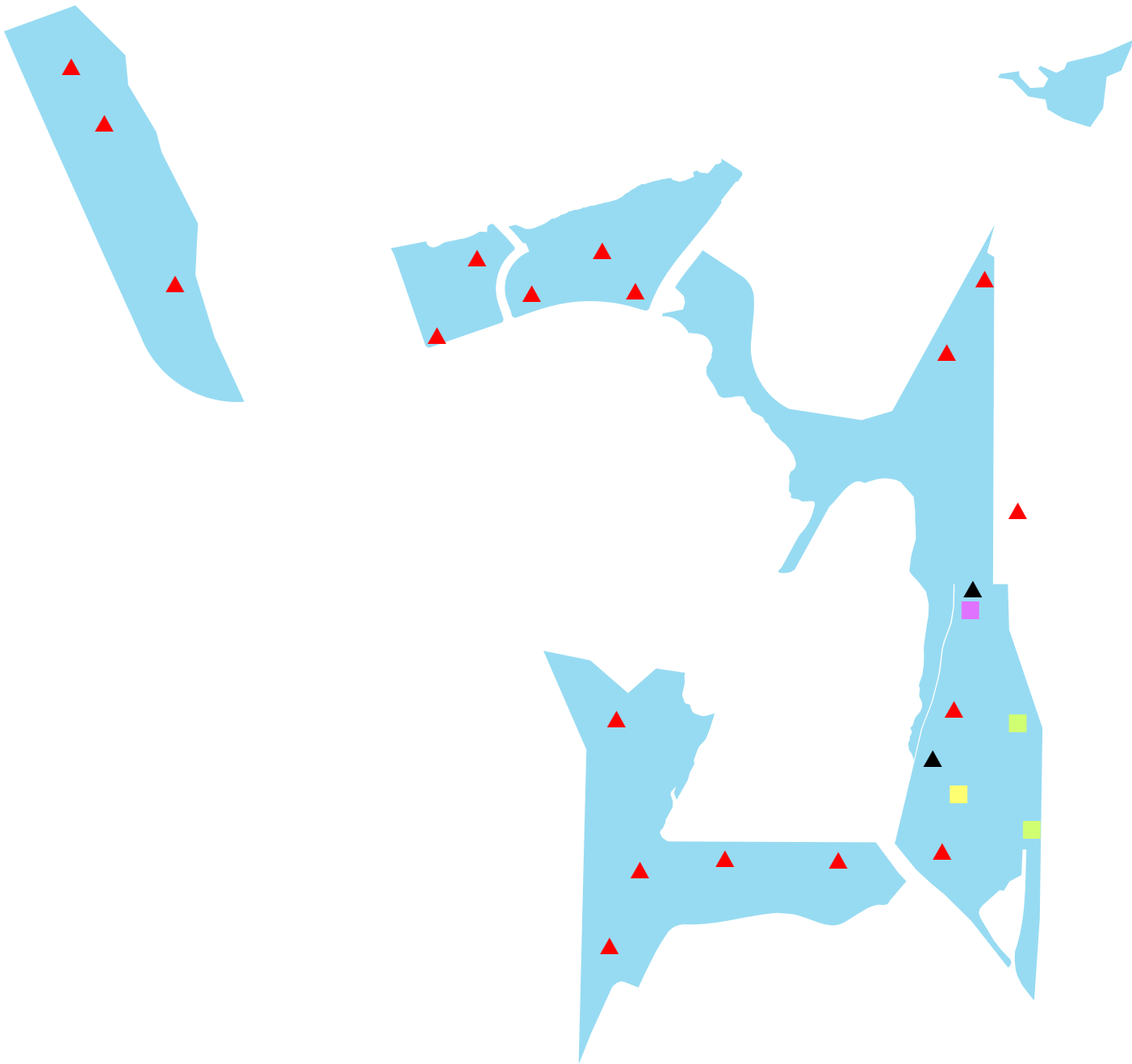


Figure 3
 Sensitive Species Locations - 2007
 Calavera Hills and Robertson Ranch Habitat Conservation Area- Carlsbad, CA



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Table 2. Percent Cover Estimates from Village H Transects.

Origin	Habit	Species	Precent Cover by Transect								Avg all Transects	St. Dev.	Avg by Origin
			1		2		3		4				
Exotic	Grass	<i>Avena barbata</i>	2.0		49.5		0.0		35.4		0.0	43.4	1.0
		<i>Avena fatua</i>	1.0	2.0		2.0	0.0	1.3		0.01			
		<i>Brachypodium distachyon</i>	10.1	27.3		21.2	7.1	16.4		0.09			
		<i>Bromus diandrus</i>	0.0	0.0		2.0	0.0	0.5		0.01			
		<i>Bromus hordeaceus</i>	2.0	0.0		0.0	7.1	2.3		0.03			
		<i>Bromus madritensis</i>	3.0	5.1		2.0	5.1	3.8		0.02			
		<i>Gastridium ventricosum</i>	0.0	0.0		1.0	0.0	0.3		0.01			
		<i>Lolium multiflorum</i>	26.3	0.0		9.1	0.0	8.8		0.12			
		<i>Lolium perenne</i>	1.0	0.0		0.0	0.0	0.3		0.01			
		<i>Vulpia myuros</i>	4.0	1.0		6.1	22.2	8.3		0.09			
	Forb	<i>Anagallis arvensis</i>	4.0	4.0	1.0	5.1	0.0	0.0	2.0	7.1	1.8	0.02	4.0
		<i>Erodium botrys</i>	0.0		4.0		0.0		5.1		2.3	0.03	
Total Exotic			53.5		40.4		43.4		49.5		46.7		

Native	Grass	<i>Nassella cernua</i>	0.0	10.1	8.1	27.3	0.0	35.4	0.0	20.2	2.0	0.04	23.2
		<i>Nassella lepida</i>	1.0		14.1		0.0		20.2		8.8	0.10	
		<i>Nassella pulchra</i>	0.0		2.0		35.4		0.0		9.3	0.17	
		<i>Nassella</i> sp.	9.1		3.0		0.0		0.0		3.0	0.04	
	Shrub	<i>Baccharis pilularis</i>	3.0	11.1	0.0	0.0	0.0	1.0	0.0	0.0	0.8	0.02	3.0
		<i>Heteromeles arbutifolia</i>	4.0		0.0		0.0		0.0		1.0	0.02	
		<i>Isomeris arborea</i>	0.0		0.0		1.0		0.0		0.3	0.01	
		<i>Rhus integrifolia</i>	4.0		0.0		0.0		0.0		1.0	0.02	
	Forb	<i>Grindelia camporum</i>	0.0	6.1	0.0	4.0	0.0	6.1	1.0	5.1	0.3	0.01	5.3
		<i>Selaginella bigelovii</i>	0.0		0.0		0.0		1.0		0.3	0.01	
		<i>Sisyrinchium bellum</i>	6.1		4.0		6.1		3.0		4.8	0.02	
Total Native			27.3		31.3		42.4		25.3		31.6		

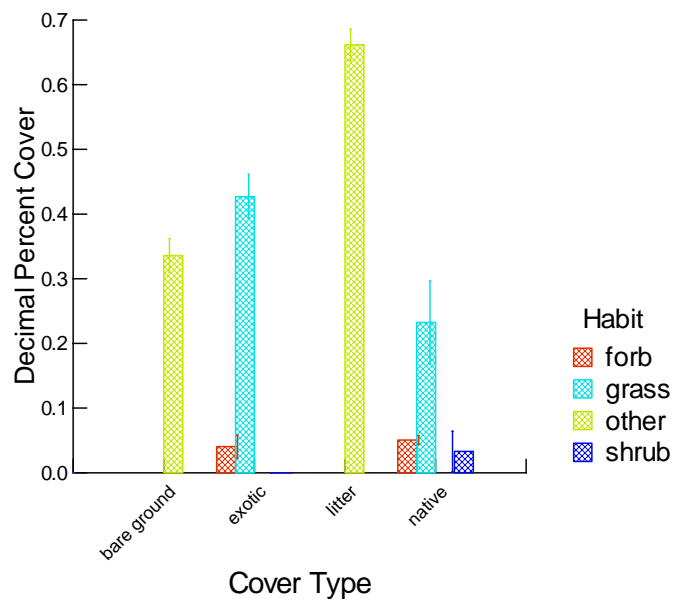


Figure 4. Percent Cover of bareground, exotics, letter and native plants within the grassland study plot. Interval includes 99 points taken at every whole meter. Error bars represent one standard error of the mean.

IV. Habitat Maintenance and Restoration

Habitat restoration and maintenance goals for the Preserve at this time is primarily removing nonnative plants and some site preparation for future restoration activities. For the most part, the Preserve is in fair condition and has good native coverage.

Weed treatments During the past fiscal year, approximately 300 pampas grass and 450 square feet of iceplant (*Carprobrotus edulis*) patches were sprayed, and approximately 300 tree tobacco plants were cut and stump-painted with herbicide. The main focus of fennel eradication has been in the newly acquired Robertson Ranch East Village parcels, the adjacent areas infested in Village X and in Village H. Developing seed heads were removed from flowering fennel remaining in Village H, and several hundred were sprayed prior to this, in the spring. Approximately 500 artichoke thistle were also treated at the afore-mentioned sites.

Pampas grass has been particularly troublesome in many areas of the Preserve. Though several populations were eliminated in the wet areas, more appeared throughout the summer, and many inflorescences were removed near the end of this report period. Many emails, and some meetings, took place between HOA management and landscapers responsible for HOA maintained lands in an effort to keep this species from producing mature flower stalks along the Preserve edges (See section V.).

Village H Crown Daisy Mowing The Center continued to contract mowing on the southern end of Village H, where the crown daisy population has been problematic. Three mowings took place during the winter, spring, and summer. The Center followed up the third mowing by applying herbicide to remaining individuals.

Wetland Restoration Area The wetland revegetation area on either side of Calavera Creek is being maintained by Treebeard Landscape Inc under contract to Mcmillin Homes Inc. RECON Environmental Inc. is the biological monitor responsible for this revegetation. The Center met with the RECON biologist responsible for monitoring this restoration due to our concern that very little progress appeared to be taking place in the establishment of natives. There were several populations of the noxious perennial pepperweed (*Lepidium latifolium*), many pampas, and other weeds filling the interstices of the native cuttings and plantings throughout the restoration site. We are currently awaiting an annual report from Mcmillin Homes that will provide a clear understanding of the timeline, and final cover requirements of this project.

Calavera Creek The section of Calavera Creek running through the east side of Robertson Ranch East parcel contains several weed populations, including an abundance of castor bean (*Ricinus communis*), poison hemlock (*Conium maculatum*), iceplant (*Carpobrotus chilensis*), and fennel. The Center contracted RECON Environmental Inc., to apply herbicide to these species and other non-natives along the entire length of this section. The Center has budgeted another year of contracted weed treatment for the summer of 2008.

Village R A large area in Village R, consisting of approximately one acre of non-native disturbed vegetation, was mowed twice during the winter and spring, respectively. Originally, this area consisted of tall black mustard (*Brassica nigra*) stands, with some large mature tree tobacco. The tree tobacco was cut and stump painted prior to mowing. The second mowing created a peculiar infestation of seedling tree tobacco and other weeds. These were sprayed with herbicide on four separate occasions through the summer. Fennel and mustard were hand-pulled and sprayed in other areas of Village R, in an attempt to encourage the existing native scrub to establish. A large off-road trail system was constructed by vandals along the southern half of Village R, and was repaired upon discovery. Also, five mature Eucalyptus, and one tree of heaven (*Ailanthus altissima*) were drilled and filled with herbicide near the center of Village R. Village R will be a focused area of habitat restoration, beginning with the above measures, with planting budgeted for the fall of 2008.

V. Public Service

Public service activities have included patrolling the Preserve in an attempt to control dumping and associated vandalism. In addition, public services include trash pick up and talking with neighboring home owners who have questions or concerns regarding the Preserve.

The Preserve was patrolled at least 3-4 times per month. During each visit the Preserve was surveyed for illegal activities, trash was picked up, and nonnative, invasive plants were killed.

Educational Outreach The Center has met with Merle O'Neill and Tom Palanscar of the Carlsbad Unified School District for the purpose of designing a field studies program to use our Preserve as a classroom. Several ideas have been discussed which may lead to curricula that will generate increased understanding among the students about the aesthetic and practical values of preserving habitat. Students conducted an afternoon of weed and trash removal efforts at Village R during spring 2007.

HOA/Landscaper Outreach The landscaping bordering the preserve is typically high-water use. The result of this hydrophilic vegetation is excess water seepage into our preserve edges, which will replace dry-adapted vegetation with wetland vegetation. In certain locations, this process has already begun, and the Center has initiated outreach to reverse this. The Center has sent numerous emails, made several phone calls, and attended meetings with landscaping contractors and HOA representatives regarding this matter, and the management of weeds. The Center has submitted HOA newsletter articles to the two HOA management entities responsible for these off-site properties in an attempt to enlist the sympathy and cooperation of homeowners.

Baseline documentation at Robertson Ranch Parcels During the spring of 2007, permanent markers were placed into the ground around the perimeter of Robertson Ranch, and photos were taken of Preserve edge and outward from these points. This will serve to document any changes from baseline conditions in cover or structure resulting from trespass, vandalism, unauthorized trail building, fuel clearance, or neighboring activities such as over-watering and non-native plant invasion. Photos were archived according to date and location taken for comparison to future photos.

VI. Reporting

Reporting includes all data analysis, GIS and remote sensing, regional coordination, photo documentation activities, budget and financial status. Data that have been entered into digital databases include survey (plant and animal) data. CNLM has received and digitized (GIS) all CE boundaries, vegetation communities, and sensitive species biotechnical reports of the properties.

Annual report This report represents the first annual report for the entire preserve (both Calavera Hills and Robertson Ranch areas). An annual report was completed for the Calavera Hills preserve activities that occurred during the partial year of work in 2006.

An annual work plan for the next fiscal year will be provided to the wildlife agencies in December of 2008.

Budget/Financials: The total expenditures for 2006-2007 were \$115,522 of a planned budget of \$123,250. The unspent monies mostly represent planned contingency funds which were not required during the fiscal year. As of April 30, 2007, the total funding for this preserve is \$1,831,352, of which \$209,834 is Initial and Capital and \$1,621,518 is Endowment.

VII. Summary and Discussion

Management of the Preserve continues to be successful by protecting it from human encroachment, building baseline biological data, and developing a better understanding of the Preserve and its regional context. Preserve Management next year will continue in a similar fashion as this year. A detailed work plan for the next fiscal year has been developed for this purpose.

VIII. References

- CNLM. 2006 The Center for Natural Lands Management. Calavera Hills Phase II Habitat Conservation Area 2006 Annual Report.
Planning Systems. 2006. Final Draft Robertson Ranch East Village Open Space Land Management Plan
Planning Systems. 2002. Calavera Hills Phase II Final Habitat Management Plan.

IX. Appendix A
CNPS Rapid Assessment Forms

CALIFORNIA NATIVE PLANT SOCIETY
SIERRA FOOTHILLS VEGETATION RAPID ASSESSMENT FIELD FORM
 (Revised March 14, 2006)

Village H. - 10.5 mi
 82 County

For Office Use:		Final database #:			
LOCATION / ENVIRONMENTAL DESCRIPTION					
Polygon/Stand #: SDG037	Air photo #:	Date: 5/19	Name(s) of surveyors: Lexine Schroeder Patrick McConnell (Christina Benich) Coolidge Sharkey		
GPS waypoint #: 037 GPS name: SDVEG GPS datum: (e.g. NAD 83) Zone: 10S / 10T / 11S (circle one)					
UTM field reading: UTME 471237 UTMN 3670405 GPS Error: ± 15 ft/m					
Is GPS within stand? (Yes) / No. If No, cite from GPS point to stand, the distance (meters) and bearing (degrees)					
Elevation: 238 ft/m Photograph #'s: N-431, NE-432, NW-438					
Geology code: SETU Soil Texture code: MFCL Upland or Wetland/Riparian (circle one)					
Macro topography: top upper mid lower bottom Micro topography: convex flat concave undulating					
% Surface cover (sum to 100%): Lg rock: 0 Sm rock: <1 Bare/Fine: 21 Litter: 75 BA Stems: 4 Water: 0					
Slope exposure: Actual °: 37 General: NE NW SE SW Flat Variable (circle one)					
Slope steepness: Actual °: 20 General: 0° 1-5° 5-25° > 25° (circle one)					
Size of stand: <1 acre / 1-5 acres / >5 acres Plot: Yes / No If Yes, denote size: 100m² / 400 m² / 1000 m² / Other					
Site history, stand age, and comments: Patchy grassland woven through sage scrub in protected island habitat. Surrounded by development and busy roads. Fire history not known, but does not appear recent Center for Natural Lands Management					
Type/ Level of disturbance codes: 01 / L 05 / L 71 / L / / "Other":					
HABITAT AND VEGETATION DESCRIPTION					
Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (24-48" dbh), T6 (>48" dbh) (circle one)					
If Tree type, list 1-3 dominant overstory spp.:					
Shrub: S1 (<3 yr old), S2 (<1% dead), S3 (1-25% dead), S4 (>25% dead)		% Total vegetation cover 30			
Herb: H1 (<4" height), H2 (4-8" ht), H3 (8-12" ht), H4 (≥2" ht)					
% Cover- Overstory Tree Conifer/Hardwood: 0 / Low Tree-Tall Shrub: 0 Lo-Mid Shrub: 41 Herbaceous: 29					
Height Class - Overstory Conifer/Hardwood: 0 / Low Tree-Tall Shrub: 0 Lo-Mid Shrub: 0 Herbaceous: 01					
Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m					
Species (List up to 20 major species), Stratum, and % cover: (Jepson Manual nomenclature please)					
Stratum categories: T (>5.0 m), M (0.5-5.0), L (<0.5m); % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%					
Strata	Species	% cover	Strata	Species	% cover
M	Avena fatua	2	L	Rupia myurus	<1
L	Nassella pulchra (Nat)	17	L	Foeniculum vulgare	<1
L	Bromus haughtensis	<1			
L	Bromus hordeaceus	1			
L	Lolium multiflorum	2	M	Baccharis pilularis (Nat)	<1
			L	Brachypodium distachyon	3
L	Anagallis arvensis	<1			
L	Sisyrinchium bellum (Nat)	3			
Unusual species:					
INTERPRETATION OF STAND					
Field-assessed vegetation alliance name: Nassella pulchra grassland					
Field-assessed association name (optional):					
Adj alliances: Coastal Sage scrub					
Confidence in alliance identification: L M (H) Explain High ID skills					
Other identification problems: Dry Season					
Has the vegetation changed since air photo taken? Yes / No If Yes, What has changed?					

CALIFORNIA NATIVE PLANT SOCIETY
SIERRA FOOTHILLS VEGETATION RAPID ASSESSMENT FIELD FORM
 (Revised March 14, 2006)

Village 11

Carlsbad, SD County

For Office Use: Final database #: _____

LOCATION / ENVIRONMENTAL DESCRIPTION

Polygon/Stand #: SDG 038 Air photo #: _____ Date: 5/9/07 Name(s) of surveyors: Leyne Schroeder Coolidge
Shirley, Christina Benich, Patrick McConnell

GPS waypoint #: 038 GPS name: SDG038 GPS datum: (e.g. NAD 83) _____ Zone: 10S / 10T / 11S (circle one)

UTM field reading: UTM 471238 UTMN 3670398 GPS Error: ± 10 ft/m

Is GPS within stand? Yes / No If No, cite from GPS point to stand, the distance _____ (meters) and bearing _____ (degrees)

Elevation: 220 ft/m Photograph #'s: N-434 NE-440 NW-446

Geology code: SETU Soil Texture code: MFCL (Upland) or Wetland/Riparian (circle one)

Macro topography: top upper mid lower bottom | Micro topography: convex flat concave undulating

% Surface cover (sum to 100%): Lg rock: 0 Sm rock: 1 Bare/Fine: 12 Litter: 82 BA Stems: 6 Water: 0

Slope exposure: Actual °: 37 General: NE NW SE SW Flat Variable (circle one)

Slope steepness: Actual °: 20 General: 0° 1-5° 5-25° > 25° (circle one)

Size of stand: <1 acre / 1-5 acres / >5 acres | Plot: Yes / No If Yes, denote size: 100m² / 400 m² / 1000 m² / Other _____

Site history, stand age, and comments: Patchy grassland within through sage scrub in
protected island of habitat surrounded by development of busy parcel
roads. Fire history not known but no trace of fire apparent.
Center for Natural Land: signs, property, Golf balls & a rabbit droppings.

Type/ Level of disturbance codes: 01/1 05/1 21/1 "Other": _____

HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (24-48" dbh), T6 (>48" dbh) (circle one)

If Tree type, list 1-3 dominant overstory spp.: _____

Shrub: S1 (<3 yr old), S2 (<1% dead), S3 (1-25% dead), S4 (>25% dead)

Herb: H1 (<4" height), H2 (4-8" ht), H3 (8-12" ht), H4 (≥12" ht)

% Cover- Overstory Tree Conifer/Hardwood: 1 Low Tree-Tall Shrub: 0 Lo-Mid Shrub: 41 Herbaceous: 32

Height Class - Overstory Conifer/Hardwood: _____ Low Tree-Tall Shrub: _____ Lo-Mid Shrub: 02 Herbaceous: 01

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species (List up to 20 major species), Stratum, and % cover: (Jepson Manual nomenclature please)

Stratum categories: T (>5.0 m), M (0.5-5.0), L (<0.5m); % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Strata	Species	% cover	Strata	Species	% cover
L	<i>Nasella pulchra</i>	25	M	<i>Horba fatua</i>	2
L	<i>Sisymbrium bellum</i>	1	L	<i>Bromus madriensis</i>	2
L	<i>Bloomeria cracca</i>	41	L	<i>Sonchus oleraceus</i>	41
L	<i>Baccharis pilularis</i>	41	L	<i>Lolium multiflorum</i>	3
L	<i>Isocoma menziesii</i>	41	L	<i>Anagallis arvensis</i>	41
		27	L	<i>Brachypodium distachyon</i>	41
			L	<i>Foeniculum vulgare</i>	41
					8

Unusual species: _____

INTERPRETATION OF STAND

Field-assessed vegetation alliance name: SDG 038

Field-assessed association name (optional): _____

Adj alliances: Nasella pulchra Horba fatua Isocoma menziesii E

Confidence in alliance identification: L M H Explain _____

Other identification problems: Dry season

Has the vegetation changed since air photo taken? Yes / No If Yes, What has changed? _____

CALIFORNIA NATIVE PLANT SOCIETY

SIERRA FOOTHILLS VEGETATION RAPID ASSESSMENT FIELD FORM

(Revised March 14, 2006)

Village H
Carlsbad, SD County

For Office Use:		Final database #:	
LOCATION / ENVIRONMENTAL DESCRIPTION			
Polygon/Stand #: SDG039	Air photo #:	Date: 5/19	Name(s) of surveyors: Christina Benich, Lexine Schroeder, Coolidge Shorkey, Patrick McConnell
GPS waypoint #: 039	GPS name: SDveg	GPS datum: (e.g. NAD 83)	Zone: 10S / 10T / 11S (circle one)
UTM field reading: UTME 4712912		UTMN 3670445	
GPS Error: ± 19 ft/m			
Is GPS within stand? Yes / No If No, cite from GPS point to stand, the distance (meters) and bearing (degrees)			
Elevation: 144 ft/m Photograph #'s: N-447, NE-448, ... NW-454			
Geology code: BETU Soil Texture code: MFCL Upland or Wetland/Riparian (circle one)			
Macro topography: top upper mid lower bottom Micro topography: convex flat concave undulating			
% Surface cover (sum to 100%): Lg rock: 0 Sm rock: <1 Bare/Fine: 38 Litter: 60 BA Stems: 2 Water: 0			
Slope exposure: Actual °: 70° General: NE NW SE SW Flat Variable (circle one)			
Slope steepness: Actual °: 16° General: 0° 1-5° 5-25° >25° (circle one)			
Size of stand: <1 acre / 1-5 acres / >5 acres Plot: Yes / No If Yes, denote size: 100m² / 400 m² / 1000 m² / Other			

Site history, stand age, and comments: Same as SDG 038 but farther down slope.

Type/ Level of disturbance codes: 01 / L 05 / L 21 / L / / / "Other":

HABITAT AND VEGETATION DESCRIPTION			
Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (24-48" dbh), T6 (>48" dbh) (circle one)			
If Tree type, list 1-3 dominant overstory spp.:			
Shrub: S1 (<3 yr old), S2 (<1% dead), S3 (1-25% dead), S4 (>25% dead)		% Total vegetation cover 23	
Herb: H1 (<4" height), H2 (4-<8" ht), H3 (8-<12" ht), H4 (≥2" ht)			
% Cover- Overstory Tree Conifer/Hardwood: 0 /		Low Tree-Tall Shrub: 0	Lo-Mid Shrub: 2
Height Class - Overstory Conifer/Hardwood: 0 /		Low Tree-Tall Shrub: 0	Lo-Mid Shrub: 02
		Herbaceous: 01	
Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m			

Species (List up to 20 major species), Stratum, and % cover: (Jepson Manual nomenclature please)

Stratum categories: T (>5.0 m), M (0.5-5.0), L (<0.5m); **% cover intervals for reference:** <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Strata	Species	% cover	Strata	Species	% cover
L	Nassella lepida	11	L	Bromus madritensis	1
M	Baccharis pilularis	<1	L	Bromus hordeaceus	2
L	Sisyrinchium bellum	3	L	Vulpia myuros	8
L	Grindellia sp.	<1	M	Foeniculum vulgare	1
L	Isocoma menziesii	1	L	Erodium botrys	4
L	Asmatenia tenella		L	Brachypodium distachyon	1
M	Isomeris arbutifolia	1	L	Pickis echinops	<1
L	Nassella pulchra	<1	L	Anagallis arvensis	<1
	Deinandra fasciculatum	<1		Avena fatua	<1

Unusual species: Snags <1

INTERPRETATION OF STAND	
Field-assessed vegetation alliance name: Nassella lepida grassland	
Field-assessed association name (optional):	
Adj alliances: Coastal sage scrub, WtF Baccharis pilularis/sambuca N	
Confidence in alliance identification: L M H Explain High ID skills	
Other identification problems: Robt Dry season	
Has the vegetation changed since air photo taken? Yes / No If Yes, What has changed?	